Dietary

1. NUTRITIVE VALUE

A hospital community is made up of individuals with widely varying nutritional needs and different food habits, who have different likes and dislikes. The hospital dietary must be designed to provide a selection of foods from which these needs and tastes can be met.

Each stage in the planning, preparation and service of meals can affect the nutritional value, palatability and acceptability of the food as it finally reaches the patient.

Some patients require only a well-balanced normal diet, but for the majority modification of the normal pattern is essential.

In most types of illness a breakdown of body tissue occurs, and its replacement demands a high level of protein in the diet. Foods which supply the vitamins and mineral salts required to assist this replacement and to regulate the body processes are of special importance. Vitamin C, which helps in the healing of wounds, is particularly needed. This vitamin is easily destroyed during the preparation and cooking of foods for large numbers, and the greatest care is necessary to retain as much of it as possible. (This is referred to below under 'Preparation and Cooking'.)

In some conditions, e.g. tuberculosis and certain surgical conditions, protein requirements are even higher than for patients generally, and maternity patients also require extra. Children need more in relation to their size than do adults, to allow for growth, and, since many old people are mal-nourished on admission, geriatric patients should be given at least as much protein as other adults.

Experience suggests that it is in the protein-containing foods (particularly those of animal origin, listed under 'Suggested Quantities' below) and also in fresh vegetables and fruit, as sources of vitamins and mineral salts, that hospital dietaries are most likely to be deficient.

While a patient is in bed or mildly active during convalescence his need for calories is reduced. If the proportion of starches, sugars and fats in the diet is too high this may cause an undesirable increase in weight and will certainly reduce the appetite for more valuable foods. The possibility that too much carbohydrate food may be taken as snacks with between-meal beverages and at afternoon tea needs to be watched.

Staff and active patients in long stay units do not need the same quantity of protein as acutely ill or convalescent patients but they require a larger proportion of the energy-giving foods to support their level of activity.

Responsibility for ensuring that the nutritional requirements of the individual patients are met is borne equally by the Catering Officer and the nursing staff. The Catering Officer must plan his menus so that a selection of dishes is available at each meal from which a range of balanced diets can be provided, while the nursing staff, who order and serve the food, must do their best to ensure that each patient obtains the quantity and type of dish which satisfies his nutritional needs as well as his taste and appetite.

Where a dietitian is available she should be consulted on the nutritional adequacy and balance of all menus. It is also very desirable that Catering Officers should obtain an understanding of elementary nutritional principles by attending

a suitable course or by the study of textbooks on the subject (see Appendix 3). This is all the more important when the advice of a dietitian is not available.

2. MEAL PATTERN

The arrangement of meals found to be most suitable is :

Early morning tea	6.30—7 a.m.	
Breakfast	8 a.m.	Cereal or fruit juice and main dish. Toast, marmalade
Dinner	12 mid-day	Two courses
Tea	3—4 p.m.	Light afternoon tea
Supper	6.30—7 p.m.	Two courses. Main dish with soup or sweet

A mid-morning and late evening milky drink should be available.

Few patients lying in bed desire or need three courses in the evening, and it is much better to provide a simple two-course meal including a light dish, which is a good source of animal protein.

For children it may be desirable to serve the evening meal as a high tea between 5 p.m. and 6 p.m. This meal should consist of one or two courses and include a dish containing a good supply of protein. The custom of serving only sandwiches or jellies to children at this meal is unsatisfactory because these items do not contain sufficient protein.

Some geriatric patients also prefer the evening meal between 5 p.m. and 6 p.m. If this is provided, a cup of tea without food should be given at 3 p.m. and a milky drink at bed-time. High tea when served should be as late as possible ; otherwise the length of time between this last substantial meal of the day and breakfast the next morning becomes too great.

The same pattern of meals is suitable for staff though some may prefer to have their main meal in the evening rather than at mid-day. It is however quite unnecessary to provide two three-course dinners daily.

3. PLANNING MEALS

The menu is the key to the standard of dietary, its nutritional balance, acceptability, and cost. Its planning demands much thought and experience to cover these aspects satisfactorily and to ensure the most efficient use of equipment and staff. This duty should therefore be undertaken personally by the Catering Officer or officer in charge of the department and should not be delegated.

Separate menus for patients on full diet, for those on light diet, and for staff should be planned in advance for a whole week. They can be revised daily, if necessary, to meet changes in the availability of food or other factors, such as climate changes or severe staff shortages, but it is necessary to plan for a week at a time to ensure good balance and variety. These menus should contain the essential nutrients in appropriate amounts and be palatable, appetising and attractive. The wider the range of dishes included in the menus over a period, the more likely it will be that the dietary is nutritionally adequate.

Meals for light diets require special attention. They frequently contain insufficient protein, vegetables and fruit and lack variety. At each meal a light dish containing protein should be provided and vegetables and fruit should be available mashed or as a puree. These menus can also be used for patients on gastric diet.

It is very desirable that there should be a choice of dishes on the menus. Dissatisfaction with food supplied in institutions is often due as much to the 'Take it or leave it' implication of set menus as to the actual quality or quantity of food provided. Dishes which seem so unpopular as to warrant complete withdrawal from the menu are often freely chosen when they are offered as an alternative to other acceptable dishes. It is comparatively easy to offer a choice of food to staff and many hospitals do so regularly. Few hospitals have attempted to give a real choice of food to patients.

In itself, the planning of a light diet menu offers a certain amount of choice and if, in addition, an alternative is provided for each dish on the full menu, a selection is available from which the requirements of most patients can be met. Some hospitals are attempting to provide several alternatives on the full menu. Others do not plan a light diet menu at all but have a range of dishes, e.g. fish, chicken, mince meat, available every day. In both these methods a particular dish tends to appear too frequently on the menu and the result may be monotony rather than variety.

Where hospital menus do at present provide alternative dishes for patients it is usually still the ward sister who decides what shall be given to each patient. It is not necessary however to resort to the complications of individual menu cards in order to allow the patient to exercise a personal choice of food. A simple ward order form can be devised on which a member of the ward staff can record the patient's choice during a brief morning visit, the form afterwards being transmitted to the catering department for summary. A duplicate sheet should be retained on the ward for reference during service (see Appendix 2). The effect of such a system on the patient's morale is well worth the very small expense of time which it involves and it should become general. It has the additional advantage of helping to reduce waste of food.

If the dishes included in the menu for full and light diet are carefully chosen, foods can be selected from them to meet the requirements of most therapeutic diets, thus reducing the work of the kitchen. Where a dietitian is responsible for these diets, she should similarly make as much use as possible of foods available on the ordinary menus.

Staff meals should follow the same pattern, but it is desirable not to serve the same dishes to patients and staff on the same day. The menu for the day staff should provide a choice of two or three dishes and vegetables for the main meal with the evening meal more substantial than that provided for patients.

A different pattern may be required for night staff as it is not easy for them to adjust themselves to eating normal meals during the night. Vegetables and fruits should be included and the food should always be freshly cooked and tasty. The lighter dishes are usually more appreciated.

Visitors taking meals at the hospital would normally expect to have the same menu as the staff.

4. SUGGESTED QUANTITIES

The following list gives recommended quantities of the more important foods for each person. These are overall average figures for a hospital, within which it is considered that the individual needs of patients and staff can be met. They should not be taken as fixed allowances.

(a) *Animal Protein Foods*

(i) Milk :

Acute Sick, Geriatric } 1½ pints daily (1 pint to ward, ½ pint to kitchen).

Maternity, T.B., Gastric } 2 pints daily (1½ pints to ward, ½ pint to kitchen).

Mental Disorders—1 pint daily (½ pint to ward, ½ pint to kitchen).

Staff—5-7 pints per week including that used in cooking.

Full cream dried milk may be used instead of some fresh milk for cooking without detriment to palatability and nutritive value and is much cheaper.

(ii) Meat, Meat Products and Offal : 2 lbs. per head weekly (9-10 meals). If carcase meat is purchased this quantity will need to be increased. Liver is particularly valuable because of its vitamin content and should be included about once in two weeks.

(iii) Bacon and Ham : 6 ozs. per head weekly (excluding bone) (3-4 meals).

(iv) Fish, fresh and dried : 12 ozs. per head weekly (2 meals). Kippers and Herrings contain vitamins and are a good and cheap source of protein.

(v) Eggs : 4-5 per head weekly (3 meals plus cooking requirements).

(vi) Cheese : 4 ozs. per head weekly (2-3 meals).

(vii) Poultry : 1½ lbs. per light and special diet weekly.

Items (ii)-(vi) are interchangeable portion for portion.

(b) *Vegetables and Fruit*

(i) Vegetables : A fresh green or root vegetable and a serving of potatoes daily ; green vegetables at least three times a week.

(ii) Salad : Include watercress in season ; tomatoes (fresh or canned) not less than twice weekly.

(iii) Fruit : Cooked fresh or dried fruit three times weekly as part of the sweet course.

(iv) Raw Fruit : 1-2 per patient and resident staff weekly, preferably citrus fruits.

(c) *Other Foods*

(i) Bread according to appetite.

(ii) Fats : Approx. 1 lb. per head weekly, to include 4 ozs. butter.

(iii) Sugar : Approx. 1 lb. per head weekly.

Control of Food Costs

5. BUDGETING

The officer in charge of the catering department should ascertain the total yearly amount allowed for provisions, and what this represents as a weekly figure per head.

Experience shows that this weekly figure needs to be allocated in approximately the following proportions :

50% on animal protein foods

20—25% on vegetables and fruit

25—30% on other foods

Care should be taken to keep a small reserve from the weekly allowance for emergencies and for seasonal fluctuation in prices.

The Catering Officer should keep accurate records of the number of meals actually supplied to patients and staff—resident and non-resident. This information should be sent regularly to the Finance Department and should also include a record of the meals and beverages which are supplied to visitors. These figures are essential for the calculation of true unit costs for the Catering Department.

The Finance Department should provide up-to-date information monthly to the Catering Officer on the actual weekly cost per person fed, and should notify any over or under-spending.

A working knowledge should be acquired of the cost per portion of various dishes, so that, when planning the menu, dearer dishes can be balanced with cheaper items within the week. This will make it possible to estimate in advance the approximate costs of the menu.

6. PURCHASING

There are several ways of buying food for hospitals. Each method has its advantages and disadvantages and may be suitable only for certain categories of food stuffs. The most common are :

(a) Area contracting : This is useful for those non-perishable commodities for which precise specification can be established. In buying for large numbers lower prices can be expected and small hospitals, which could not otherwise buy on such terms, particularly benefit by these arrangements.

(b) Group contracting : This is probably the commonest method used for the purchase of non-perishable foods. Some groups also use it for buying perishable commodities but, except for milk, bread and fats, this is not always satisfactory.

(c) Competitive quotations from a selection of nominated suppliers : This system works very satisfactorily and is recommended for the purchase of perishable foods, but it requires constant vigilance to maintain standards and operate economically.

(d) Direct purchase : In areas where markets are convenient and the purchasing officer is an expert buyer, direct purchase may secure high quality perishable foods and better value for the money expended. There is, however, the danger that the time devoted to this kind of purchasing and the associated clerical work, may cost more in salaries than the savings effected in the purchase of food.

Whatever the buying policy it is essential that the Catering Officer should advise on the quality of the article to be bought and on the price. He should examine all specifications, stipulate frequency of delivery, and advise on the length of contract. Long contracts are not as a rule desirable. The Catering Officer should receive copies of contracts and be responsible for seeing that the article delivered always reaches the standard stipulated.

It may seem superfluous to say that all supplies should be ordered according to the planned menu and the estimated number to be fed, but it is often found that high food costs are due to over-ordering, particularly where standing orders to contractors are in operation.

The following notes may be useful :

(i) Groceries : These should be bought in the size of pack appropriate to the rate of consumption. Tinned foods are relatively expensive and the amount of liquid varies in different brands of the same commodity. It is important, if these are to be used economically, not only to buy the correct size but also to know the yield per tin.

Items such as tinned and powdered soups, prepared cake and pudding mixes usually cost more than the same dishes made in the kitchen from basic ingredients, and should be avoided as far as possible.

The purchase of sliced and wrapped bread has proved an economy in many hospitals.

Biscuits and bottled sauces are expensive in relation to their nutritive value and issues should be carefully controlled.

Proprietary fruit squashes, glucose drinks and dietetic foods are expensive. Fruit squash, which is only justified for patients ordered a high fluid diet, and glucose drinks (if they should be necessary) can be more cheaply prepared in the hospital. Special dietetic foods are rarely necessary.

(ii) Meat, Fish and Cheese : In large hospitals, or in a concentrated group of hospitals, which have a qualified butcher, it is generally more economical to buy carcase meat, but in smaller hospitals it is almost invariably more satisfactory and cheaper to buy meat in joints of the correct size and cut for the needs of the menu. It is then most important that the weight, cut and grade of meat required should be specified on the order and carefully checked on receipt. A proportion of cheaper cuts should be used. Home-killed meat has no nutritional advantage over good quality imported meat.

Tinned meats should be stored in a cool place, but not in a refrigerator. Some are relatively expensive and should be used sparingly.

Gammon is an expensive joint, and shoulder or collar bacon can often be used instead.

The purchase of fish depends very much on local conditions. Prime white fish can be used to give variety in light and special diets, but should not be used extensively for other purposes. Many types of cheaper fish can be cooked in a variety of ways and are as nutritious and as appetising as some of the dearer types.

Cheese is a cheap and good source of protein but processed or boxed cheeses are expensive.

(iii) Fruit and Vegetables : Quality is of the utmost importance in these commodities because of the high wastage from inferior goods. It is important for green vegetables to be ordered and delivered in the quantity and at the time required, since the storage of green vegetables causes a loss of Vitamin C.

Out-of-season fruits and vegetables are too expensive to be included in routine menus.

For certain types of vegetables, which are laborious to prepare from the raw state, the use of frozen packs can be justified, but other types of frozen fruit and vegetables should be used sparingly.

Dehydrated vegetables can be a useful standby for emergencies and in times of scarcity of raw vegetables. They should always be purchased gas-packed and should be reconstituted exactly in accordance with the directions.

7. STORAGE

Supplies cannot be properly controlled unless each delivery is checked on receipt for weight, quality and price. Scales of suitable size must be provided.

Some hospital groups have found that a central store for non-perishable foods is an advantage; but often the cost of overheads, transport, etc., more than offsets any saving in food costs.

Storage is required for :

(a) Non-perishable commodities, which should be stored in a ventilated store of adequate size with sufficient, and preferably adjustable shelving.

(b) Perishable foods : Separate compartments in the cold storage space are required for milk, meat, fish, bacon and fats, and for kitchen use, the total requirement being approx. 1 cu. ft. per person fed, except that more will be required where carcase meat is stored. Cabinets are more useful than built-in cold rooms for frozen foods and fish.

(c) Fruit and Vegetables : These should be stored in a cool, well-ventilated store, with duck boards for sacks and movable metal racks for other vegetables. A cupboard with wire mesh doors, which can be locked, is needed for fruit.

(d) Bread : Slatted shelves which allow air to circulate are required either in the main food store or in a separate room.

The windows of food stores should be protected by fly-proof screens. Cleaning materials and disinfectants must never be stored with food.

8. ISSUES AND REQUISITIONS

All requisitions for food from wards and departments should be checked and countersigned by the Catering Officer before issues are made. Issues for the ward should be checked against the bed state.

It is essential for the Catering Officer to exercise control over the direct issues as these items account for a high proportion of the food consumed, and he is responsible for keeping the total cost within the amount allowed for food.

Certain items such as sugar, tea, fats and milk, can be distributed to the wards and dining rooms most conveniently on a pre-arranged scale daily. Other items such as condiments, jams, breakfast cereals, etc., should be ordered by the ward sisters and dining-room supervisors in the quantity required, checked by the Catering Officer, and issued weekly on a stated day. All these issues, including milk and bread, should be made by the stores staff and not by kitchen staff.

The quantities to be used in cooking should be requisitioned daily on the basis of the planned menu, standard recipes and the number to be fed.

9. CONTROL OF COOKED FOOD

The most common cause of high food costs in hospitals is lack of control over the quantities of food prepared and issued in relation to the numbers to be fed. There is a tendency to over-insure against shortage by issuing more food to the wards than is really required.

Patients may be admitted or discharged unexpectedly after ward requisitions have been compiled ; their appetites may vary from day to day with their condition ; more meals may be ordered than there are patients in the ward, to cover possible admissions or to have extra food to offer as a choice to some patients ; carelessness in the kitchen may result in issuing quantities which bear little relation to the numbers to be fed.

There is also often excess food prepared for staff dining-rooms when the kitchen is not regularly informed of the number of staff on duty.

That over-issue is an important cause of waste cannot be stressed too strongly. It wastes not only the ingredients but also the labour and fuel involved in preparation. If it is to be avoided, co-operation between the catering department

and the nursing staff is indispensable, and to achieve this co-operation the Catering Officer must visit the wards regularly at meal times. It should be clearly understood that this is an essential part of his duties.

The following procedures are suggested as a means of achieving good control :

(a) Copies of the menus should be distributed to the wards and should show the foods available for full and light diets for all meals, together with alternative dishes if these are provided (see paragraph 3).

(b) Ward sisters should order the number of portions they require of each dish, instead of the number of complete, full or light diets as in the traditional method. A revised form of requisition will generally be required, and an example is given at Appendix 1. Many ward sisters compile a diet list for their staff to follow when serving meals. This list can be used to indicate which dishes have been ordered for individual patients.

(c) The number of patients for whom food is ordered should be checked against the bed state by the Catering Officer and any discrepancies investigated. Admissions and discharges expected at the time the requisition is made should be noted on the form ; unexpected ones should be notified to the kitchen as early as possible.

(d) The ward orders should be transferred to a kitchen work-sheet or board.

(e) The Catering Officer should decide, for each item on the menu, the size of portion to be issued. These portions will be the basis of his forecast cost of the menu referred to in paragraph 5 and the standard recipes mentioned in paragraph 11. For some items the standard portion may vary on different wards—e.g., for potatoes it may be 6 ozs. for a men's orthopaedic ward and 3 ozs. for a women's geriatric ward—but, once the size has been agreed with the respective ward sisters, food should be measured correctly into the trolleys by the kitchen staff and checked against the kitchen work-sheet by one of the supervisory staff before despatch.

(f) The size of portion should be indicated wherever possible, e.g. by marking pies and puddings. For liquids and semi-liquids the ladles used in the wards and dining-room should be the correct size for the portion intended. Standard equipment for service should include $\frac{1}{4}$ pt. and $\frac{1}{8}$ pt. ladles and ice cream scoops of an agreed size.

(g) Another serious cause of waste arises when the patient is served with more food than he desires. To a large extent this is due to lack of attention to the patient's individual tastes and appetite when food is served. A bed-to-bed service from the trolley makes it easier to ascertain these individual requirements and also reduces the amount of walking by staff (see paragraph 20).

10. SWILL

It is the responsibility of the Catering Officer to check the swill bins daily and where there is evidence of avoidable waste to investigate the cause.

Preparation, Cooking and Despatch of Food

11. PREPARATION AND COOKING

Economies should not be effected by reducing the basic proportions of certain ingredients (e.g. fat in pastry, milk in sauces and puddings, sugar and fat in

cakes). This only results in products of poor quality. Recipes should conform to the correct proportions to be found in standard cookery books. Such standard recipes, giving the quantities of ingredients, method, time of cooking and number of portions, should be worked out for each dish. These should be available for the use of all cooking staff and it is convenient to have them prepared in card index form The cost per portion should also be calculated by the Catering Officer and may be entered on the card for ready reference when planning menus.

Similarly the methods of preparation and cooking should conform to correct practice to ensure palatability with maximum yield and nutritive value.

The cooking of each item on the menu should be timed so that it is ready as near to the time of despatch from the kitchen as possible. This is particularly important for vegetables, especially green vegetables, to prevent destruction of Vitamin C. Vegetables should not be cooked in large quantities in one large boiling pan, but should be cooked in several smaller pans. This ensures more rapid cooking and is likely to result in less destruction of Vitamin C.

Roast meat should be cooked as late as possible allowing only time for carving and serving. The practice of roasting meat in advance, carving cold and reheating is most dangerous since it can cause food poisoning. It also reduces the palatibility of the meat.

Senior staff should check food leaving the kitchen for taste and appearance as well as for quantity. The sauces, stuffings, etc., customary with certain dishes, should be served to patients as well as to staff.

12. SERVICE

It is helpful to arrange the food in the containers so that the person serving, either on the ward or in the dining-room, can see at a glance what is intended as a portion and can serve this easily. If this is done, the food will look more attractive on the plate. If not, the size of the portion will not be controlled and the cost per portion as calculated will become meaningless.

Too much handling of food detracts from its appearance and wastes time. It can be avoided if the same containers are used for cooking and for despatch. It is advisable to choose containers which fit with economy of space into both cooking equipment and food trolleys. Shallow containers, not more than 3 in. deep, are more suitable than deep ones for the majority of items, except liquids. A range of sizes to fit standard dimensions (e.g. full size, $\frac{1}{2}$, $\frac{1}{3}$, and $\frac{1}{4}$ size) makes it possible to send food in different quantities while still using the full capacity of the containers. The food remains hot longer, control is easier and transport space is saved.

13. STAGGERED MEALS

This system is being operated most successfully in a number of large hospitals with the co-operation of the medical and nursing staff. It is arranged that groups of wards shall have different meal-times so that food can be cooked and sent from the kitchen in relays over a period of 1 hr.-1$\frac{1}{2}$ hrs. This method can be used not only for dinners but also at breakfast and supper.

The advantages are :

(a) Cooking and serving in relays shortens the interval between completion of cooking and service in the wards. Food reaches the patient in a more palatable condition, and less Vitamin C is lost.

(b) The pressure on the kitchen is greatly reduced and more attention can be paid to making the food attractive.

(c) A continuous service of meals in the staff dining-room can be provided with a more restful and better standard of service.

14. TRANSPORT

This can be a real problem in a large scattered hospital. For units within reasonable distance of the kitchen and on the same level or accessible by lift, service by electrically heated trolleys is possible and desirable ; but for outlying villas or wards on a different floor to which there is no lift, portable containers are essential.

Many attempts have been made to devise suitable portable equipment but the perfect system is still to seek. The basic requirements are :

(a) A selection of metal containers with lids, of hygienic design, in a range of standard sizes. For liquids and semi-liquids these should be deep, non-spill and insulated ; for all other foods they should not be more than 3 in. in depth and a type suitable for use in ovens and steamers as cooking utensils.

(b) Facilities in the main kitchen for warming up the containers when the food cannot be cooked in them.

(c) Conveyors as light as possible in weight but capable of retaining the maximum heat in the food containers. They may be electrically heated or insulated, but should be of robust construction. The use of shallow food containers for most foods and standardisation of sizes, facilitates the use of shelved conveyors of the cupboard type, which are easier to load and unload and take up less space in the trolley bay than the box type. They should have strong handles for carrying and non-projecting firm catches for the doors. For large wards it is preferable to use more than one conveyor to ease handling.

(d) Motorised or powered delivery vans, preferably with low platforms for distribution of the conveyors to outlying units ; they should be used only for food and be totally enclosed and easily cleaned.

(e) Light metal trolleys to transport the conveyors at the kitchen and ward level will, if an appreciable distance has to be covered, save labour and damage to the conveyors.

(f) At the ward the containers should be transferred to a hot closet sited for direct service to the patients.

Cleaning and Maintenance

15. Far from setting an example to other types of establishment the standard of cleanliness in many hospital kitchens at the present time leaves much to be desired. In part this may be due to poor design and siting of equipment, but in large measure the reason is to be found in careless methods of work and lack of organised cleaning programmes. Schedules covering each section of the kitchen should be drawn up to show the frequencies at which the various items of equipment should be cleaned, e.g. after use, daily, weekly, etc. Staff should be made responsible for keeping clean their own work tables, but all other cleaning should be set out in daily and weekly work lists and allocated according to the staff on duty so that each knows for what he is responsible. Detailed supervision

of this work is the responsibility of the Kitchen Superintendent or Head Cook, but the Catering Officer should lay down the standards to be maintained and ensure that they are achieved.

Kitchen equipment is expensive and the work of the department can be greatly handicapped when it is out of order. Grease and burnt spilt food act as heat insulators, reduce the efficiency of cooking equipment and shorten its useful life. Regular cleaning and maintenance is therefore of great importance. Kitchen machines are as liable to breakdown through lack of regular maintenance as from improper use.

Arrangements should be made for regular inspection and technical maintenance of each machine and of the cooking equipment, and records should be kept to show when servicing is due and completed. Contracts for regular servicing by the suppliers are advisable for the more expensive items.

Staffing

16. It is difficult to generalise on the size of staff required in hospital catering departments. Study of the individual circumstances is essential. The following guidance is given to assist hospitals in making their own assessment.

17. KITCHEN

As a rough guide, kitchen staff will be needed in the ratio of 1 to every 25-50 mid-day meals. The larger the hospital, the lower the proportion. In small hospitals (150 main meals and under) the proportion of 1 to 25 meals may even need to be exceeded.

Normally the work of the kitchen is approximately 50% cooking and 50% domestic. Domestic work includes the preparation of vegetables, cleaning and washing up. Approximately half the kitchen staff will therefore need to be cooking grades and half domestic assistants and porters.

Of the cooking staff slightly less than one-third will be in the supervisory grades (Assistant Head Cook and above) depending upon the spread of hours, and of the remainder approximately half will be Cooks and half Assistant Cooks.

The duties allocated to each worker should be appropriate to his grade. For example, it is generally uneconomic for Cooks or Assistant Cooks to be employed in preparing vegetables and routine cleaning.

Duty rotas should be arranged well in advance so that workers know their times of duty beforehand. Rest days should be spread as evenly as possible over the week ; periods of annual leave should be spread over as many months as possible (normally 1st April to 30th September).

The normal spread of meals in the day is 14 hours and requires early and late shifts in the kitchen to cover all the duties. In very small hospitals there is often no need for staff to be on duty in the afternoon and the evening meals can be more economically covered by employing part-time staff than by working full-time staff on split duties.

Where catering staff are employed throughout the night, the minimum of staff compatible with the service required should be on duty. One person can cook, serve and wash-up a main and light meal for up to 25-30 persons because night meals necessarily have to be served in relays. It may be more convenient

to employ two part-time staff to cover the seven nights than to have one full-time with relief from day staff.

If, because of local circumstances, it is necessary to have two people on duty at night though the work only justifies one, work schedules should be planned to include preparation work, etc., which will make full use of their services. This is, however, always an expensive method of working.

The payment of mixed duty rates should be considered in the smaller hospitals when more than one grade of work is required of one person. This particularly applies to night work.

18. DINING ROOMS

The staffing of the dining-rooms depends on the type of service. Cafeteria service needs approximately 1 staff to every 30 diners, semi-waitress service 25 % more and full waitress service some 50 % more. These staffs should be sufficient for all duties—service, washing-up and cleaning. Cafeteria service is slow if there is not enough staff serving. The work should be so arranged that there is no wasted labour either behind the counter or on washing-up, and that tables are kept clear of used crockery.

19. DUTY ROTAS

In some hospitals duty rotas are not planned to use staff economically. Common faults are :

(a) Starting the first shift earlier, and ending the late shift later, than necessary.

(b) Bringing on more staff to serve breakfasts than the work demands.

(c) The overlapping of shifts at mid-day for a longer span than the work requires.

(d) The arrangements of shifts and days off so that the number of staff on duty for the three main meals differs widely on different days.

It will usually be found that a rota combining long and short working days gives better cover for the busy periods and less overstaffing at slack times than the use of shifts of equal length.

Service to Patients

20. TRANSPORT AND PRESENTATION OF MEALS

The service of meals can be greatly affected by the manner in which food is transported from the kitchen to the ward. Trolleys should be of the right type and size for the number of patients in the ward and should be the correct height for easy service. They should be used for all meals. Porters from the general pool rather than the kitchen staff should deliver the trolleys. This arrangement will speed up delivery as more porters can be made available at the same time. Porters should be provided with special coats for this work. When the trolley reaches the ward nothing should be allowed to delay the service. The interruption of meal service by the attendance of medical staff in the ward causes most delays and every endeavour should be made to see that this is avoided.

The presentation of meals to the patients has a strong influence on their attitude to the food, and a most decided effect on the amount of waste. Much more could be done in many hospitals to make the food look attractive.

Before the meal-time trays should be set with tray-cloths, condiments, cutlery and napkins. Paper tray-cloths and napkins are always fresh and clean and although at present somewhat costly, their use could do much to improve the service. Joint contracting may enable prices to be achieved which, with the saving in laundry costs, would make them economic. The cutlery should be of good quality. It is suggested that trays should be laid in the ward pantry and conveyed on a shelved tray trolley into the ward. The electrically heated food trolley can then be taken, along with the tray trolley, from bed to bed. This allows the server to give the patients the kind and amount of food they require, saves unnecessary walking and speeds the service.

After the first course has been eaten, used plates should be removed from the patient's tray when serving the next course. The trays with the dirty crockery should be collected on the tray trolley and the plates scraped and stacked in the ward pantry out of sight of the patients.

The food trolley with the unserved food should be returned to the kitchen so that the Catering Officer can see whether the amount of food sent to the ward has been excessive. In this way the necessary adjustments can be made to avoid further waste.

The service of food at breakfast and tea is often not well co-ordinated. It is disconcerting for patients to wait a long time between receiving the cooked dish, bread and butter and tea. Individual teapots might be used more generally. When there are ambulant patients in the ward, correctly laid tables are required in the day space if one is available, or in the ward.

21. WARD PANTRIES

The ward pantry is provided for work connected with the service of meals to patients. No cooking should be done there except of eggs and making toast and beverages.

Equipment will be needed for heating plates, for supplying boiling water, for storage of items such as beverage ingredients, breakfast cereals, fats, crockery and cutlery and for washing-up. It should be of the right size for the number of patients in the ward.

To meet these requirements the following will be needed :

(a) a hot closet, a boiling ring, and toaster or high level grill ; the hot closet must be large enough to accommodate all the plates required at one meal : a domestic cooker is not suitable for this purpose ;

(b) an instantaneous or bulk water boiler ; an instantaneous water boiler is the most convenient and economical type of equipment for tea making, etc., but in areas where the water is particularly hard a bulk boiler may give better service ;

(c) a refrigerator ; which need be large enough only to store the daily supply of butter and the milk that is not required immediately ;

(d) a ventilated food cupboard ; this is for storing jam, sauces, bread, cereals and beverage ingredients. Storage space can often be saved if the spacing of shelves is carefully planned ;

(e) a crockery cupboard with a drawer designed for cutlery ; it is convenient to store tea cups, tumblers, egg cups, condiment sets, etc., on sliding tray shelves to avoid handling individual items. Cutlery drawers should be designed so that the different types are kept separate for easy handling. All shelving should be easily cleaned ;

(f) a washing-up unit ; it is essential to have adequate facilities for washing-up, and to observe correct procedures. Either two sinks, one with a heating unit (sterilising sink), or a dishwashing machine and one sink are required. With two sinks it is essential to provide crockery baskets, a draining board on each side of the sinks large enough to take two of the baskets and space between the sinks to take another. With a dishwashing machine an adequate length of bench on both sides of the machine is essential.

In pantries where there is at present only one sink, a combined detergent/sterilant should be used. Only where a chemical sterilant is used should the use of tea towels for drying crockery be permitted ; with either a heated rinsing sink or dishwasher the temperature and time for rinsing should be adjusted to ensure satisfactory air drying.

Where centralised washing-up facilities are available only one sink with draining boards need be provided in the ward pantry. Easily-cleaned trolleys of suitable size for conveying the crockery, covered, to and from the central wash-up room will be needed.

(g) a wash hand basin.

Service to Staff

22. The modern practice is to have one dining-room for all grades of staff with partitions to give privacy to some groups if desired. It should be an attractive room with correctly laid tables. Waitress service is expensive in staff and is seldom, if ever, justified. Where a choice of dishes is offered, a cafeteria service is more satisfactory. In small hospitals, however, a family service is both suitable and desirable.

A well-appointed cafeteria service appeals to the diners because it is speedier. It is also economical in dining-room space and in the use of dining-room staff. Attractively displayed food in the correct sequence on the service counter and a sufficient number of serving staff are of particular importance. The menu should be displayed at suitable points so that the diner can decide on his choice of food before the service counter is reached.

The provision of a coffee room reduces the time spent in the dining-room by the diner, who is then able to relax after his meal. This permits the prohibition of smoking in the dining room. A café set can be provided in the coffee room or coffee pots and teapots can be provided on a trolley. No staff are needed for serving these drinks but dining-room staff should be available to remove the dirty cups and keep the trolley replenished.

Hygiene

23. Sick people are susceptible to food infection and very high standards of cleanliness must therefore be maintained throughout the catering department. The staff must be clean as well as the premises and equipment and they must have suitable protective clothing. Hygienic methods of food handling must be insisted upon and further advice will be found in the handbook issued by H.M. Stationery Office entitled, "Clean Catering".

The most important points are :

(a) Cooking and serving staff must wash their hands and dry them on paper or automatic roller towels immediately before handling food, especially after using the toilets.

(b) Vulnerable foods such as those made with meat, fish, milk, eggs or cream must be heated through when served hot, and cooled quickly before refrigeration, i.e. foods should be held only at temperatures above 145°F or below 50°F. They should be protected from flies and dust and not allowed to stand in a hot kitchen, or for any length of time in a hot closet.

Hospitals should maintain the standard of hygiene specified in the Food Hygiene (General) Regulations, 1960.

Hospitals for Mental Disorders

24. The basic principles in this booklet apply to these hospitals, but when very large numbers are catered for there are some special problems.

25. DIETARY

The majority of patients require a normal dietary similar to that which they would have at home. Many patients are in hospital for several years and it is most important that their meals should contain all the essential nutrients.

Some patients will be ordered a 'soft diet'. Too often this consists only of soup or bread and milk with an occasional egg. These patients should be given the full diet suitably prepared by mincing or sieving, or an alternative soft dish when necessary. Sufficient protein, vegetables and fruits must be included and the actual amounts taken by patients must not be reduced by the addition of too much fluid.

Some suitable dishes for soft diets are :
sieved porridge with milk ;
scrambled egg ;
creamed fish, fish roes ;
minced liver, meat or bacon ;
sieved fruits and vegetables ;
fruit juices ; milk puddings ;
sweet and savoury custards.

In large hospitals it is often found to be more satisfactory to plan two menus for full diets to run concurrently so that half the patients can have one, and half the other. The advantage of this is that smaller quantities of each type of food have to be dealt with and better use can be made of cooking equipment and kitchen staff. A menu for patients on light or gastric diet will need to be planned in addition.

26. PREPARATION, COOKING AND DESPATCH

The methods discussed above should be particularly valuable in hospitals for mental disorders, especially those mentioned in paragraphs 11 to 14.

Since many patients are ambulant, and cafeteria service is often used, it will be found most convenient to have a hatch between the dining room and the ward pantry, in which can be sited a hot closet, large enough to hold plates for the number to be fed. A table or shelf will be needed from which cold foods can be served.

The equipment required in the ward pantry has already been listed (paragraph 21), but when tea has to be made for over 50 patients, a bulk boiler is usually found to be more satisfactory than the instantaneous type. Milk and sugar should be put on the table or in the cups but never in the teapot or the multipot.

Small Hospitals

28. In general the advice given in this booklet will apply in small hospitals, but some of the points need to be modified.

(a) The catering will be part of the duties of the Matron or her assistant.

(b) Normally only a "goods received" book need be kept.

(c) One refrigerator with two compartments, one of which should be kept locked for bulk fats and bacon, may be sufficient.

(d) The menu for the patients on full diet and the one for staff may be the same.

(e) In very small units the Matron may serve the patients' dinners from the kitchen. Plate covers will be necessary.

(f) All staff should have their meals in the staff dining room. Kitchen and domestic staff should not eat in the kitchen. It is usual to have a family service for nursing staff.

APPENDIX 1

_____ Hospital

WARD MEAL REQUISITION (Example)

KITCHEN

Ward A
Date 1.7.61
No. of Patients 30

Dinner

Soup	10			
	Main Course	Sweet	Veg.	Pots.
Full A	9 + 2 soft	8	13	13
Full B	4	4		
Light	8 + 2 soft	13	10 + 2 pureed	12
Total	25	25	25	25

Supper

Soup	8			
	Main Course	Sweet	Veg.	Pots.
Full A	4 + 2 soft	4	2	10
Full B	4	4		
Light	12 + 2 soft	12	8	
Total	24	20	10	10

Breakfast

	Porridge	Strained porridge	Cooked dish
Full	10		13
Light		10	9
Total	10	10	22

Perforated

SPECIAL DIETS TOTAL 5

Diabetic 1 Full A
Reducing _____
Gastric 2 Light
Low Residue _____
Low Fat 1 light
High Protein 1 Full B
Low Protein _____

Please note below any changes expected before next requisition.

1 Discharge p.m. 1.7.61
2 For operation 2.7.61

Signature _____
Sister in charge

STORES

Ward A
Date 1.7.61
No. of Patients 30

The following items will be issued according to scale. Please indicate quantity required if different from the agreed scale.

Milk _____ pints
Bread, Brown _____
White _____
Butter _____
Sugar _____
Tea _____

EXTRAS to be ordered as required

Received by
Signature _____

N.B.
A specimen form for weekly requisitions for dry goods, e.g. condiments, breakfast cereals, etc., is not given because many hospitals have developed their own form suitable for machine accounting.

APPENDIX 2(a)

_____ Hospital

SUMMARY OF PATIENTS' SELECTIONS

Bed No.	Patient's Name	Dinner											Supper							Breakfast		
		Soup	Main course			Potato		Vegetable		Sweet course			Soup	Main course			Sweet course			Porridge	Cooked dish	
			Full	Light	Alt.	A.	B.	A.	B.	Full	Light	Alt.		Full	Light	Alt.	Full	Light	Alt.		Full	Light
1																						
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3																						
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(a) This form should be completed in duplicate. One copy being sent to the kitchen and the other retained on the ward for use during service.

(b) The form is completed once daily by a member of the ward staff visiting each patient with a copy of the current menu. (See Appendix 2(b). A tick is placed in the appropriate column to indicate the patient's choice.

(c) In the kitchen the forms may be attached to a peg board in such a way that only the totals for each ward are visible to serve as a work sheet. This reduces work by avoiding additional summary sheets.

WARD

Totals to be added in catering department.

APPENDIX 2(b)

_____Hospital

Patient's Menu Week Commencing_____

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
BREAKFAST	Porridge availa	ble daily from the	kitchen. Cereals	from tbe ward.			
Full							
Light							
DINNER	Soup available	daily.					
Main Course							
Full							
Light							
Alternative							
Vegetables							
Potatoes A							
Potatoes B							
Vegetables A							
Vegetables B							
Sweet Course							
Full							
Light							
Alternative							
Afternoon Tea							
SUPPER	Soup available	daily.					
Main Course							
Full							
Light							
Alternative							
Sweet Course							
Full							
Light							
Alternative							

3. USEFUL BOOKS AND DOCUMENTS

1. Manual of Nutrition — H.M.S.O. 3/-
2. Clean Catering — H.M.S.O. 3/6
3. Human Nutrition and Dietetics. Davidson, Meiklejohn and Passmore. Pub. Livingstone. 84/-
4. Recipes for 100. Obtainable from Ministry of Health. 1/-
5. Memorandum on Special Diets
6. Memorandum on Light Diets

   } King Edward's Hospital Fund for London 1/-
7. Abstracts of Efficiency Studies in the Hospital Service. No. 20, 1961. Catering Arrangements. Preparation of food—potato peeling, H.M.S.O. 8d.

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MINISTRY OF HEALTH

Hospital Catering

LONDON
HER MAJESTY'S STATIONERY OFFICE
1962

MINISTRY OF HEALTH

HOSPITAL CATERING

The provision of meals for hospital patients and staff is one of the largest catering services in the country. The importance of good food for sick people and the large cost of catering departments has led authorities to pay increasing attention to ways of improving efficiency.

Certain problems of organisation and management are common to many hospitals. This booklet advises on some of these problems and suggests ways to improve efficiency and reach high standards of dietary and of food service. It is not intended as a manual of hospital catering but is a collection of practical suggestions based on observations by the Catering Advisers of the Ministry and of Regional Boards of current methods in hospitals in England and Wales.

The design and equipment of kitchens and dining rooms are covered in the Ministry's Building Notes Nos. 10 and 11 and will be dealt with more fully in a later Building Bulletin.

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